

d) REMARKS

The claims are 1-5 with claim 1 the sole independent claim. Claim 1 has been amended to clarify the informality alleged to be present.

Applicant acknowledges that claims 3 and 4 would be allowable if rewritten in independent form. Because Applicant believes that in view of the present response, all the claims should be deemed allowable claims 3 and 4 have been maintained in their present form.

Claim 1 was rejected under Rule 112, second paragraph, as being indefinite. Claim 1 has been clarified to provide that the switching layer and recording layer are coupled by exchange coupling such that recorded domains of the recording layer are transferred to the domain wall displacement layer.

The Examiner requested some clarification with regard to the phrase “the saturation magnetization of the domain wall displacement layer and the recording layer are in opposite directions.” Applicant welcomes the opportunity to respond to the Examiner’s concern. The saturation magnetizations of a domain wall displacement layer and a recording layer which are coupled by exchange coupling are parallel to (or in the same direction to) each other when the compositions of these layers are both transition metal rich. That is, the transition metal sublattice magnetization is dominant. The respective saturation magnetizations are also in the same direction when these layers are both rare-earth rich; that is, the rare-earth sublattice magnetization is dominant.

On the other hand, the respective saturation magnetizations are in opposite directions, when one layer is transition-metal rich and the other is rare-earth rich.

Consequently, the direction of saturation magnetization for the recording domains transferred will vary depending on the compositions of the respective layers.

Claims 1 and 5 were rejected as anticipated by Yonezawa '229. Claims 1 and 5 were also rejected as obvious over Yonezawa '229 in view of Hashimoto '219. Claim 2 was rejected as obvious over Yonezawa '229 in view of either Awano '514 or Hashimoto '219 in view of Awano '514. The grounds of rejection are respectfully traversed.

The Examiner argues that the saturation magnetization of the domain wall displacement layer and the recording layer are in opposite directions as illustrated by arrow 32 and arrow 15 in Fig. 2. However, it will be demonstrated that this assumption is incorrect.

Initially, the Examiner should consider the disclosure in instant specification page 14, lines 10-22 regarding Fig. 1A. In Fig. 1A each white arrow 4 indicates direction of saturation magnetization of a magnetic domain and each black arrow 5 indicates the direction of transition metal sublattice magnetization in the corresponding magnetic domain. As noted on specification page 17, line 18, to page 19, line 7, when the saturation magnetization of the magnetic domain to be expanded and the saturation magnetization of a corresponding recorded domain are in the same direction, the magnetostatic force is directed to reliably expand the magnetic domain. This stabilizes the starting point of displacement of the domain wall. As the domain wall passes through the region between positions Xb and Xc, the saturation magnetization of the recorded domain of magnetic layer 1 and the saturation magnetization of the recorded domain of magnetic layer 3 are in

opposite directions. However, the directions of transition metal sublattice magnetization, which is represented by the black arrow, are initially in opposite directions at the beginning of the pulse and are then switched to be in the same direction.

The Examiner's attention is directed to instant Fig. 8A representing the prior art in which the black arrows 114 indicate the directions of atomic spin of the transition metal sublattice magnetization.

In Yonezawa '229, black arrow 32 is not identified. In column 5, lines 47 and 48, it is disclosed "In Fig. 2, the arrow in the vertical direction indicates the direction of magnetization." Accordingly, Yonezawa fails to teach whether arrow 32 is the direction of saturation magnetization or the direction of transition metal sublattice magnetization. Since there is absolutely no explanatory disclosure in Yonezawa regarding arrow 32, any possible meaning of the arrow can be assumed by one of ordinary skill in the art.

Yonezawa does not disclose or teach the problem to be solved by the present invention, which is the fluctuation of the starting point of domain wall displacement. Therefore, Yonezawa appears to be similar to Fig. 8A of the prior art of the present invention regarding transition metal sublattice magnetization..

The defects of Yonezawa are not remedied by the secondary references.

Wherefore, Applicant submits that none of the references, whether considered alone or combined, disclose or suggest the present claimed invention, nor render it unpatentable.

It is respectfully requested that the amendment be entered, since it responds to the informalities raised by the Examiner. In addition, the amendment should be entered because it places the claims in allowable form and reduces the issues for possible appeal.

In any event, the claim should be allowed and the case passed to issue.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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